



CEREMONY REPORT
Unveiling of an interpretive
sign commemorating the



Three Cowra Bridges over the
Lachlan River 1868 - 1986

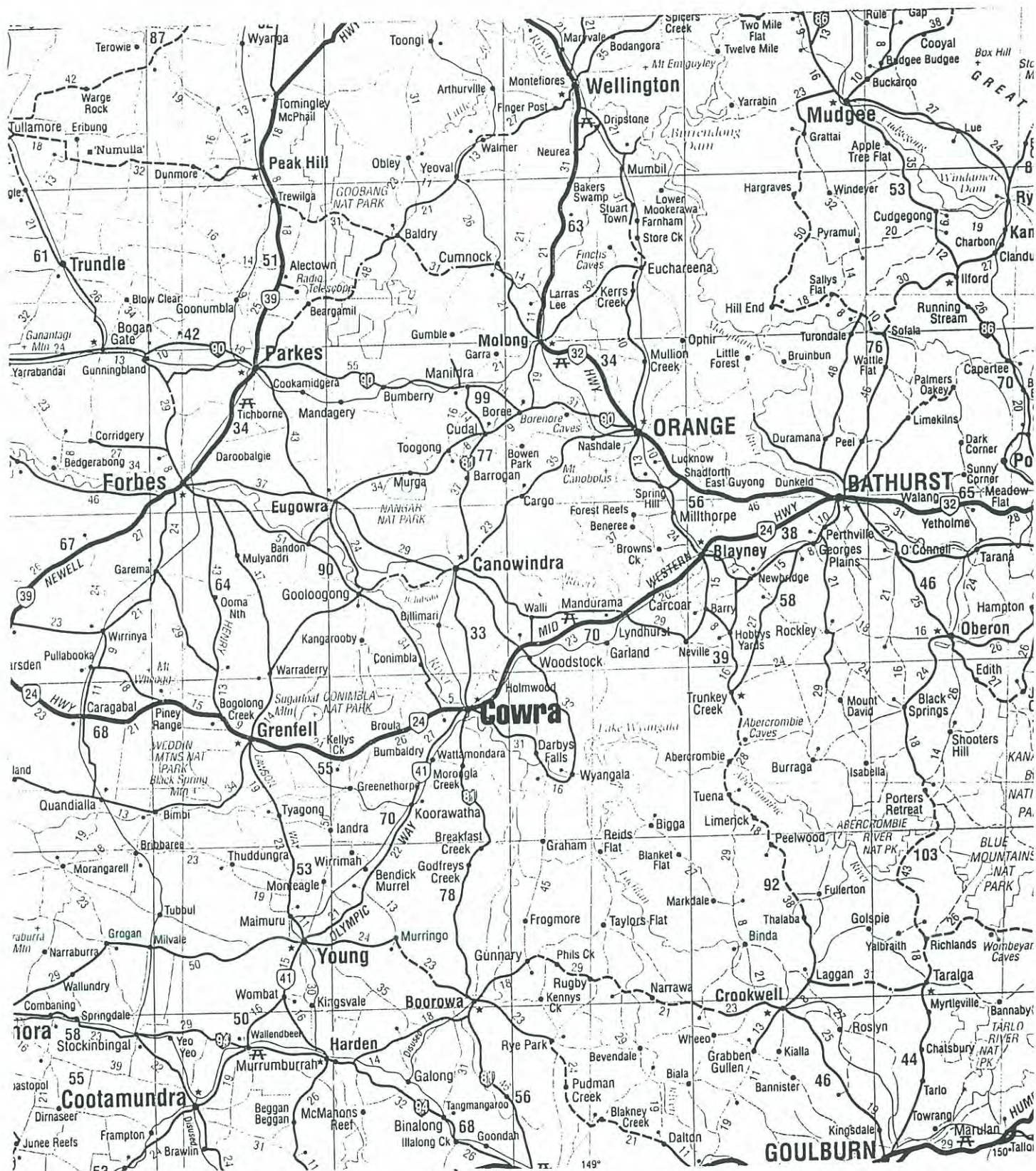
Saturday, 26 October, 2002



View from Cowra Lookout. The 1986 concrete bridge is across the view and the 1893 bridge had been on its left. The site for the sign and the ceremony is marked with an X.



The interpretive sign is next to elements from the 1893 bridge in Edgell Park with the 1986 concrete bridge in the left background.



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THE BRIDGES OVER THE LACHLAN RIVER AT COWRA

THE MAYOR BRUCE MILLER
Cowra Shire Council

and

MR BRUCE HOWARD
President Sydney Division
The Institution of Engineers, Australia

invite

..... Mr & Mrs D. Fraser

to the unveiling of a sign interpreting the
historic significance of the road bridges
erected over the Lachlan River at Cowra since 1868

2 pm Saturday 26th October 2002

Edgell Park, Boorowa Road,
adjacent to Cowra Bridge
(opposite Visitor Information Centre)

Light refreshments will be served afterwards
in the Rose Garden opposite

RSVP 22nd October 2002
Mrs Kylie Reeves
(02) 6340 2066

Bridges' history retold in new interpretative signs

This weekend a new interpretative sign telling the history of Cowra's two timber road bridges over the Lachlan River will be unveiled.

Deputy Mayor Bill Murphy and Mr Bruce Howard, President of the Sydney Division of the Institution of Engineers, Australia will lead a short civic ceremony that will commence at 2.00pm on Saturday October 26 in Edgell Park (opposite the Visitor Information Centre).

"The sign features historic photographs of the bridges and is a joint project of the Institution of Engineers and Cowra Shire Council," said CSC Technical Officer Kylie Reeves.

"It was instigated by the Institution because of the importance to Australian bridge building of the two Cowra designs.

"Members of the Institution will be in Cowra on Saturday for the opening and without doubt they will be able to provide a wealth of interesting techni-

The first bridge over the Lachlan River, the McCallum truss bridge, was an American, not British design.

The all timber bridge spanned the river from 1868 until 1893 when it was replaced with a timber and iron truss bridge designed by John A. McDonald.

McDonald, a well-qualified British engineer, re-designed the standard Public Works Department truss, producing the McDonald Truss.

McDonald's bridge at Cowra was the largest of its type in Australia and carried increasing loads of traffic until 1986 when it was replaced with the current pre-stressed concrete structure.

For further information contact Kylie Reeves, CSC Technical Officer, ph 6340 2000.

Birthday candles for Garden

23rd birthday celebrations for Cowra's famous Japanese Garden

The Cowra Japanese Garden and Cultural Centre is celebrating its 23rd birthday and age has certainly brought with it beauty.

The Garden has grown and developed into a well-known attraction and has welcomed more than one million visitors since its opening.

It was officially opened on October 21, 1979, by Japanese Chamber of Commerce and Industry Foundation President Mr Nagano and was an initiative of the Cowra Tourism Corporation, Ab Oliver and Don Kibbler.

Mr Oliver was presented with a life membership to the Garden at birthday celebrations on Tuesday morning.

Construction of the Garden began under the guidance of Ken Nakajima in 1978.

In the following year Cowra

experienced the beginning of a four-year drought but, with no irrigation in place, local residents rallied behind the project to save the Garden, laboriously watering 6,000 shrubs and plants.

Many events involving the community have since been held in the Garden, including Sakura Matsuri, Children and Kindergarten days, Dolls Festival, Carols by Candlelight, operas and open days for events such as Australia Day, Mothers and Fathers Days.

Each place will include an audio presentation, to create a unified approach to reconciliation and to enhance the visitor experience.

"Another initiative of the Garden is to implement a Plant Nursery," Ms Miller said.

"The gardeners have already begun propagating plants within the Garden, enabling visitors and locals to purchase plants at a very reasonable price."



Cowra Japanese Garden and Cultural Centre employees, tourism officials, local business people, tourists, Mayor Bruce Miller and former mayor Ab Oliver were present to help with the cutting of the Garden's 23rd birthday cake on Tuesday.

Course to minimise robbery trauma

Cowra Shire Council invites Cowra employers and staff who handle and transit money to attend an "Armed Hold Up Training" course.

Under new OHS legislation employers have a duty of care to provide a workplace that is safe and without risk to health.

This duty of care extends to taking all reasonable steps to minimise the likelihood of armed robbery and any trauma that results from its occurrence.

Two sessions of The Armed Hold Up Training course will be held in the

Multi Purpose Room commencing at the Cowra Library from 12.30pm - 4.30pm on Wednesday November 6 and then again from 9.30am - 1.30pm on Thursday November 7.

Cost per person is \$99.00 (GST included) and payment is required with your confirmed booking and can be made at Cowra Shire Council's Customer Service Centre. The training is accredited by the Australian National Training Authority and will be provided by Corporate Protection Services who recently conducted training for the National Local

Government Customer Service Network in Sydney. The trainers will offer insight on a robbery from the bandits' perspective and then through a coordinated video / workbook program will provide instruction on what to do during and after a robbery, weapons and suspicious behaviour to be aware of, precautions that can be taken and more.

Numbers are limited so if you would like to attend or need more information on the course contact Maria Vallely, ph 6340 2061, by Friday November 1.

WOODSTOCK EARTHMOVERS

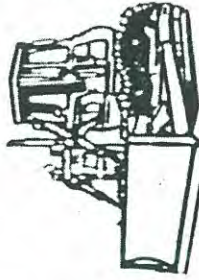
BULLDOZERS SCRAPERS EXCAVATOR BOBCAT
TIP TRUCK FRONT END LOADER LOW LOADER

FOR HIRE

The Cowra Guardian

apologises for any inconvenience caused.

For professional service call the numbers below



FOR ALL ENQUIRIES CALL:
JOHN COOLEY-

Phone 6345 0234 - Fax 6345 0237

Mobile 0428 699 318

* Please note:

The listings for this business in the Cowra Community Guide and the Cowra Rural Guide are incorrect

Cowra Bridges

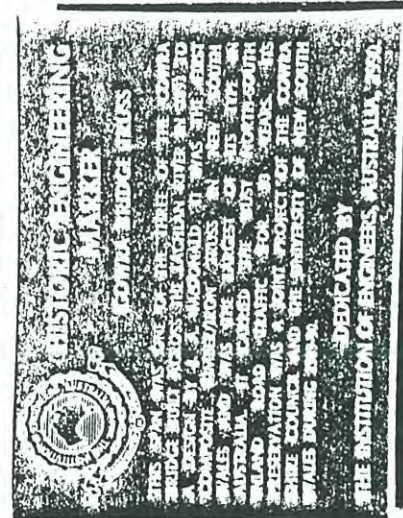


The 1893 Cowra Bridge
The Cowra Free Press reported on 9/9/1893, "the new bridge is a composite of steel and timber. This has been done with a view to obtaining the maximum strength at the minimum cost".

The McCallum truss bridge, begun in 1868, was quoted in the Town and Country Journal 9/3/1872 as "the largest bridge in Australia and the only one of these of American principle".



The 1986 bridge is made from two parallel prestressed concrete boxes resting on paired concrete piers. It was built by McDougall - Ireland Pty Ltd to a Department of Main Roads approved design by Rankine and Hill in 1981. The piers are on 1 metre diameter concrete piles taken down to granite bedrock.



A 1893 composite truss was in the park from 1989 to 1999, and the 1990 commemorative plaque.



The Institution of Engineers, Australia
and
Cowra Shire Council

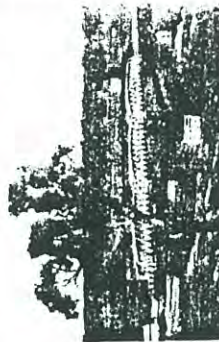


UNVEILING of an INTERPRETIVE SIGN COMMEMORATING

THE BRIDGES OVER THE LACHLAN RIVER COWRA

The first bridge constructed at this site was an American all-wooden McCallum truss bridge of three spans. It existed from 1868 until replaced in 1893 by a bridge designed by John A. McDougall.

The McDougall bridge was the first in New South Wales to use a composite timber-iron truss and was the largest of its type in Australia. The bridge carried the heaviest loads and was in use for 33 years until 1986, when it was replaced.



1868 All-wooden bridge in background with new McDougall bridge in foreground.

John McDougall came from England. He joined the Department of Public Works, NSW, in 1875 and from 1883 to 1893 was Engineer in Charge. McDougall made a significant contribution to bridge design in NSW. His achievements include making it the standard PWD truss to produce the "McDougall truss" design of all the large timber truss bridges from 1884 to 1893. McDougall was also the first to use a composite timber-iron truss and the first to use a composite timber-iron truss and the first to use a composite timber-iron truss.



1868 McDougall bridge.

In 1986 one of the McDougall truss spans that had been erected in Bryant Park was awarded an Historic Engineering Marker plaque by The Institution of Engineers, Australia. However, it was demolished in 1999. Subsequent to this becoming an artifact.



1893 McCallum truss bridge.



Cowra Shire Council and The Institution of Engineers, Australia 2002

Saturday, 26 October 2002
at 2 pm
in Edgell Park, Cowra



Cowra interpretive sign ceremony – the venue and the guests.



Cr. Bill Murphy, representing Cowra Shire Council, welcomed guests and spoke of the significance of Cowra's history and the importance of the bridges to the town's development.



Bruce Howard, President of Sydney Division, Institution of Engineers, Australia, spoke about engineering heritage, some technical details of the bridges and the designer of the 1893 bridge, John A McDonald.

COWRA BRIDGES INTERPRETIVE SIGN
Speech notes for
Bruce Howard, President, Sydney Division, I E Aust.
26 October, 2002.

Distinguished guests, Councillor Murphy, Members of :-

**Cowra Shire Council, Cowra and District Historical Society,
The Roads and Traffic Authority, The National Trust,
The Institution of Engineers, particularly the members
of the Engineering Heritage Committee, Sydney;
Ladies and Gentlemen.**

Just over 12 years ago there was a ceremony similar this one, near to here, which honoured the 1893 Cowra Truss Bridge through a sample span in this park, with a Historic Engineering Marker plaque.

The bridge in the park and the plaque are shown on the back of today's Ceremony Brochure.

Unfortunately, not all relics survive the weathering of time, and that span was removed for safety reasons in May 1999.

However, as they say "You can't keep a good bridge down", so here we are today to acknowledge the contributions that the 1893 bridge and two others have made to Cowra, and to New South Wales, for over 130 years.

It's also a special occasion for the way in which we portray our gratitude to these bridges, their engineers and contractors.

Instead of revising a plaque, Engineering Heritage Australia, through its Chairman Michael Clarke proposed an Interpretive Sign so as to better acknowledge the three bridges. The Institution of Engineers was delighted to be able to blend in with Cowra Shire Council's project to erect a series of Interpretive Signs commemorating the many historic features of Cowra.

Heritage is the evidence of our past that we leave to future generations.

Usually it involves some physical evidence of the item, as happened here briefly, with the bridge in the park.

But memories are just as important, and, as the holders of those memories pass on, there is a need to make up for that loss through documented records and displays, as we have here today.

I would now like to expand upon the information about the three Cowra bridges that appears on the Sign and in the Ceremony Brochure.

In 1861 the N S W colonial government was short of cash (that has a familiar ring) and decided to contain infrastructure costs by insisting on local materials being used – stone and timber.

Some fine railway stone viaducts were built between 1865 and 1870 – Stonequarry Creek at Picton and Knapsack Gully at Lapstone just to mention two.

For road bridges, timber became the dominant material, particularly our famous ironbark.

The Chief Engineer of the Roads and Bridges Branch of the Department of Public Works, W C Bennett, introduced a timber truss able to span up to 90 feet. It became known as the OLDPWD truss.

But at sites like crossing the Lachlan River at Cowra, larger spans were necessary and the source of the technology was America.

From their immense forests, American carpenters and engineers developed a large range of patented timber truss bridges, one of which was the McCallum truss, able to span 130 feet. Three of these spans were built here during 1868-1870, and a similar bridge was built over the Richmond River at Casino in 1874.

D C McCallum was an experienced engineer and Manager of the New York and Erie Railway. He developed his patented truss in 1852.

The patented McCallum bridge probably came here in kit form without the need for a local design and was assembled by Baillie & Co.

It was officially opened on Australia Day, 26 January 1870.

Fortunately, we know a lot more about the designer of the 2nd bridge in 1893, John A McDonald.

He was an expatriate English engineer who joined the Department of Public Works in 1879 in the Roads and Bridges Branch. He held the position of Engineer for Bridges from 1889 to 1893. One of his early tasks was to design a new generic timber truss structure for road bridges, which now bears his name, the McDonald timber truss. It came into regular use in 1884 and about 90 McDonald bridges were built in the 10 years to 1894 when it, in turn, was superseded by the Allan truss. There are five surviving McDonald timber truss bridges in NSW.

Importantly for us today, McDonald pioneered composite timber and steel construction in 1893 with his 160-foot trusses at Cowra. The design set the basis for E M DeBurgh's successful composite truss bridges, the nearest one from here is at Gooloogong.

But McDonald also designed bascule or drawbridges over some of the North Coast rivers, but none survive, having been replaced when the coastal shipping trade died out. He also designed sliding bridges and lift bridges.

The 1889 iron arch bridge that carries Smollet Street over Bungambrawatha Creek in Albury is a surviving example of his design skills.

But of colonial bridges, the most significant are his iron lattice road bridges. He refined the previous heavy designs, the nearest from here is at Forbes, in 1884 to produce a new series of more slender bridges, three of which are in the Hunter Region.

J A McDonald died in 1933.

At this stage there is no additional information I can add about the 1893 bridge than what is in the Ceremony Brochure.

And so to the present prestressed concrete bridge.

It was designed to an RTA Specification by Consulting Engineers, Rankine & Hill and built under RTA supervision by McDougall-Ireland Pty Ltd between 1983 and 1986, being opened on 29 November that year.

It is a technological world apart from the 1893 timber trusses, being twin continuous post-tensioned concrete box girders 2.1 metres deep. There are 7 spans, the largest over the river is 62 metres (that's 203 feet) with 6 spans of around 40 metres (131 feet). Remember, the timber trusses were 160 feet spans, so John A McDonald's bridge was cutting edge technology for its time.

Interestingly, both bridges have almost the same total length, 1040 feet for the 1893 bridge and 1,000 feet for the concrete bridge.

The rest as they say "is history" and this Interpretive Sign is a permanent record of the three historic road bridges over the Lachlan River at Cowra.

I invite Councillor Murphy to join me in unveiling the interpretive sign.



The sign unveiled by Councillor Murphy and Bruce Howard.



Michael Clarke, left, Chairman of Engineering Heritage Australia, I E Aust, who devised and coordinated the project, and Bruce Howard.



THE BRIDGES OVER THE LACHLAN RIVER COWRA

The first bridge constructed at this site was an American all-timber McCallum truss bridge of three spans. It existed from 1868 until replaced in 1893 by a bridge designed by John A McDonald.

The McDonald bridge was the first in New South Wales to use a composite timber/iron truss and was the largest of its type in Australia. The bridge carried the busy north-south inland road traffic for 93 years until 1986, when it was replaced.



1868 McCallum truss bridge, with new McDonald bridge in background



1893 McDonald truss bridge

John McDonald came from England. He joined the Department of Public Works, NSW in 1879 and from 1889 to 1893 was Engineer for Bridges. McDonald made a significant contribution to bridge design in NSW. His achievements include redesign in 1896 of the standard PWD truss to produce the "McDonald Truss"; design of all the lattice girder road bridges from 1884 to 1893; design c. 1884 of a series of sliding bridges at Lismore, Coopernook and Erina; and design of early bascule and lift bridges such as over the Darling River at Bourke in 1883. McDonald died in 1933.



1893 McDonald truss bridge

In 1990 one of the McDonald truss spans that had been erected in Bryant Park, was awarded an Historic Engineering Marker plaque by The Institution of Engineers, Australia. However, it was demolished in 1999 because it had become unsafe.

The existing seven span bridge comprises two prestressed concrete, continuous box girders. It was designed by the then Department of Main Roads and opened in 1986.



Cowra Shire Council and The Institution of Engineers, Australia. 2002



The interpretive sign.



A commemorative mug depicting the 1893 Cowra Bridge has been produced by the Cowra and District Historical Society.

ACKNOWLEDGEMENT

The Institution of Engineers, Australia, gratefully acknowledges the support and cooperation received from Cowra Shire Council in this project, particularly the contribution by Mrs Kylie Reeves.